

REMARKS/ARGUMENTS

Claims 8-17 are pending in this application. By this Amendment, Applicant amends Claim 8.

Applicant appreciates the Examiner's indication that Claims 12 and 13 are allowed.

Claims 8-11, 14, 15, and 17 were rejected under 35 U.S.C. § 102(b) as being anticipated by Takamine et al. (U.S. 6,781,478). Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Takamine et al. in view of Funasaka (U.S. 7,245,193). Applicant respectfully traverses the rejections of Claims 8-11 and 14-17.

Claim 8 has been amended to recite:

An elastic wave filter comprising:
two longitudinally coupled resonator type elastic wave filter elements, each longitudinally coupled resonator type elastic wave filter element including three IDTs arranged on a piezoelectric substrate in a transmitting direction of an elastic wave; wherein
two of the three IDTs of one longitudinally coupled resonator type elastic wave filter element are cascade connected to two of the three IDTs of the other longitudinally coupled resonator type elastic wave filter element;
each of the three IDTs includes a central portion and end portions disposed on either side of the central portion in the transmitting direction of the elastic wave;
each of the central portion and the end portions includes at least two electrode fingers disposed therein; and
in at least one of the longitudinally coupled resonator type elastic wave filter elements, the electrode fingers disposed in the central portion of at least one of the IDTs that are cascade connected are arranged at a pitch that is smaller than a pitch of the electrode fingers disposed in the central portion of a remaining IDT that is not cascade connected, such that a frequency of a conductance peak in said at least one of the cascade connected IDTs is higher than a frequency of a conductance peak in the remaining IDT. (emphasis added)

In the Response to Arguments section on page 8 of the outstanding Office Action, the Examiner stated:

While [Takamine et al.] is "silent" with respect to the "precise proportions of the elements", there is no teaching that the drawings and in particular Fig. 8 is not representative to support the rejections of record

above. Clearly, Fig. 8 shows electrode fingers of the IDTs 201 and 202 having a different pitch and further supported by (col. 5, lines 27-30) where Takamine teaches the pitch of at least electrode fingers 206 and 207 (of IDT 202 – Fig. 1) are different than the rest of the electrode fingers supporting what is shown in the figures.

Applicant cites col. 5, lines 3-11 of Takamine. The Examiner directs Applicant's attention to col. 5, lines 27-30 which further teaches "In addition to Fig. 1, **widths of the electrode fingers 206 and 207 on each side of the IDT 202 are preferably broader than those of the remaining electrode fingers.**" (emphasis added). Thus, as can be seen by the explicit teaching of Takamine, the pitch of at least electrode fingers 206 and 207 are different than the rest of the electrode fingers supporting what is shown in the figures (discussed above). Moreover, fingers 206 and 207 are of IDT 202 which is not cascade connected (Fig. 8) thus Applicant's arguments are not persuasive and the rejections of record above are maintained by the Examiner.

Applicant's Claim 8 has been amended to recite the features of "each of the three IDTs includes a central portion and end portions disposed on either side of the central portion in the transmitting direction of the elastic wave," "each of the central portion and the end portions includes at least two electrode fingers disposed therein," and "in at least one of the longitudinally coupled resonator type elastic wave filter elements, the electrode fingers disposed in the central portion of at least one of the IDTs that are cascade connected are arranged at a pitch that is smaller than a pitch of the electrode fingers disposed in the central portion of a remaining IDT that is not cascade connected." Support for these features is found, for example, in paragraph [0065] of Applicant's originally filed Substitute Specification and in Fig. 3 of Applicant's originally filed drawings.

At best, Takamine teaches electrode fingers 206 and 207 of the IDT 202 that are arguably arranged at a pitch that is larger than a pitch of the electrode fingers of the IDTs 201 and 203. In other words, Takamine merely teaches that electrode fingers of the IDTs 201 and 203 are arranged at a pitch that is smaller than a pitch of two of the electrode fingers 206 and 207 disposed in the end portions of the IDT 202.

However, in the device of Takamine et al., the pitch of the remaining electrode fingers of IDT 202 other than the electrode fingers 206 and 207 is the same as the pitch

of the electrode fingers of the IDTs 201 and 203. That is, all of the electrode fingers in the central portions of each of the IDTs 201, 202, and 203 of Takamine et al. are arranged at the same pitch, and none of the electrode fingers in the central portions of any of the IDTs 201, 202, and 203 are arranged at a pitch that is smaller than the pitch of any of the other electrodes in the central portions of any of the IDTs 201, 202, and 203.

Thus, Takamine et al. certainly fails to teach or suggest the features of “each of the three IDTs includes a central portion and end portions disposed on either side of the central portion in the transmitting direction of the elastic wave,” “each of the central portion and the end portions includes at least two electrode fingers disposed therein,” and “in at least one of the longitudinally coupled resonator type elastic wave filter elements, the electrode fingers disposed in the central portion of at least one of the IDTs that are cascade connected are arranged at a pitch that is smaller than a pitch of the electrode fingers disposed in the central portion of a remaining IDT that is not cascade connected” as recited in Applicant’s Claim 8.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 8 under 35 U.S.C. § 102(b) as being anticipated by Takamine et al.

In addition, Applicant’s respectfully submits that it would not have been obvious to modify the SAW filter of Takamine et al. so as to include the features of “each of the three IDTs includes a central portion and end portions disposed on either side of the central portion in the transmitting direction of the elastic wave,” “each of the central portion and the end portions includes at least two electrode fingers disposed therein,” and “in at least one of the longitudinally coupled resonator type elastic wave filter elements, the electrode fingers disposed in the central portion of at least one of the IDTs that are cascade connected are arranged at a pitch that is smaller than a pitch of the electrode fingers disposed in the central portion of a remaining IDT that is not cascade connected” as recited in Applicant’s Claim 8.

Takamine et al. discloses in col. 5, lines 27-30, “In addition, as shown in FIG. 1, the widths of the electrode fingers 206 and 207 on each side of the IDT 202 are

preferably broader than those of the remaining electrode fingers. With this arrangement, the space in the gap between the IDTs is reduced” in order to reduce transmission loss. If the IDT 202 of Takamine et al. were modified such that the electrode fingers disposed in the central portion thereof, instead of end portions thereof, were arranged at a pitch that is smaller than a pitch of the electrode fingers disposed in the central portion of the IDTs 201 and 203, then the IDT 202 would be unsatisfactory for its intended purpose of reducing the gap between the IDTs 201, 202, and 203 so as to reduce transmission loss.

The Examiner is reminded that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) and MPEP § 2143.01.

The Examiner relied upon Funasaka to allegedly cure deficiencies of Takamine et al. However, Funasaka clearly fails to teach or suggest the features of “each of the three IDTs includes a central portion and end portions disposed on either side of the central portion in the transmitting direction of the elastic wave,” “each of the central portion and the end portions includes at least two electrode fingers disposed therein,” and “in at least one of the longitudinally coupled resonator type elastic wave filter elements, the electrode fingers disposed in the central portion of at least one of the IDTs that are cascade connected are arranged at a pitch that is smaller than a pitch of the electrode fingers disposed in the central portion of a remaining IDT that is not cascade connected” as recited in Applicant’s Claim 8. Thus, Funasaka fails to cure the deficiencies of Takamine et al. described above.

Accordingly, Applicant respectfully submits that Takamine et al. and Funasaka, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant’s Claim 8.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claim 8 is allowable. Claims 9-11 and 14-17 depend upon Claim 8, and are therefore allowable for at least the reasons that Claim 8 is allowable. Claims 12 and 13 are allowable as indicated by the Examiner.

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In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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